From:	IACAList on behalf of Andreas Olligschlaeger via IACAList
To:	Fosberg, Barry
Cc:	iacalist@iaca.net
Subject:	Re: [IACA] [EXTERNAL] Is anyone using the "Gottlieb method"?
Date:	Tuesday, July 16, 2019 9:38:58 AM
Attachments:	image004.png ATT00001

Warning: This email originated from outside the City of Bakersfield. Think before you click!

Those are definitely wise words, Barry and Chris!

As someone who has dabbled in this area once or twice, I couldn't agree more. There has been very little actual research into the effectiveness of various law enforcement software suites, particularly in the area of forecasting. The idea of giving a potential vendor a data set, having them run the forecasts, and then compare the results to what actually happened is a great idea. However, care should be taken to provide a data set that is more than just spatial clusters of data. Anyone can accurately predict that crime hotspots that have existed for years or decades will still be there in the next time period. Even a random walk can do that. The key to forecasting is to tell law enforcement something they didn't already know. For example, where will crime move as a result of law enforcement activity? Similarly important is that an analyst should be able to explain how and why a prediction was made. Black box software unfortunately doesn't always allow for that.

For what it's worth, I think the debate over transparency in predictive policing is very similar to the current debate over the use of AI in law enforcement, such as facial recognition. I have worked in both fields and believe that many of the concerns are real and valid. On the flip side, there is also a fairly large misconception by many (especially the media) about what AI is and how "smart" it truly is. AI and predictive analytics have enormous potential in law enforcement. I have seen both produce very positive results, even to the extent that lives have literally been saved. So, while there are definitely valid concerns, it would be unwise to throw out the baby with the bath water, as some would like to have it. I think the real problem here is that laws, regulations and ethical guidelines (to the extent that they exist) are, as is often the case, decades behind the technology. In the end, analysts, decision makers, and most importantly the public that we all ultimately serve in one capacity or another have to be confident not only in the results of our work, but also that the methods and any underlying data were used in an ethical manner. In my opinion the only way to do that is to be honest and transparent about the various techniques that are used, as well as their limitations.

Olli

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On Tue, Jul 16, 2019 at 9:55 AM Fosberg, Barry via IACAList <iacalist@listserve.com>

wrote:

> "and hardly any research has been directed in evaluating the effectiveness of various techniques."
>
> As is typical of the thoughtful work of Chris Bruce this conclusion is vastly significant.
>
> It continues to be very hard for departments to find anything like a Consumer Affairs review of what can be very expensive vendor analytical products. Product testing and comparative analysis can be expensive and making results public can invite the shadow of legal exposure. Likely this Is beyond the ability of IACA. RAND has done some work around the edges but I do not think they routinely publish critiques of named LE Analytic products. I would like to see BJA take an active role or fund LE research institutions.
>
> At the level of the department analyst a very important insistence should be that short listed vendor offerings should be subject to a fairly simple test. Give the vendor your old info and test the results against what actually happened. This notion can be applied to any technique, free sources like Crime Stat IV or one of yourown devising. Whatever the process, it does not know if it is looking at a 2019 data or 2015 data. The difference is that you already know what happened.
>
> Parenthetically, a univ. professor can make this testing part of teaching methods. Give students data for several case studies and compare the result.
>
> With a little cooperation from the vendor this need not take that much of your time. If you have to run the tool and test it, as would be the case with the Gottlieb method, or most other free products, you could be making a large draw against your copious free time, but your decision makers will have that much more confidence in your results.
>
> I have done this for myself and on a vendor product. There may be a space for IACA to collect results , or methodologies from analysts or researchers. A library of this information might represent a collection rather than an endorsement. Likely there is a devil in the details in the making a collection. I defer to others who have that expertise.
>
> V/R

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In God We Trust, All Others Bring Data

Sgt. Jeremiah Johnson, Ph.D., Darien Police Dept, Conn.

NIJ Notes from the Field Sept, 2018

From: IACAList <iacalist-bounces+barry.fosberg=houstonpolice.org@listserve.com> **On Behalf Of** Christopher Bruce via IACAList
Sent: Monday, July 15, 2019 3:39 PM
To: iacalist@iaca.net

Subject: Re: [IACA] [EXTERNAL] Is anyone using the "Gottlieb method"?

To answer Dr. Schwartz, I think that a calculation of the mean center and standard deviation—of either the coordinates (which makes an ellipse or rectangle) or the distances (which makes a circle)—is quite common for identifying the area of concentration in a crime series. For anyone who hasn't had a chance to use it, CrimeStat automatically does standard deviation ellipses (one and two), standard deviation rectangles, and standard distance deviation circles.

I would caution, however, that this method really only works as a forecasting method when a) the series is clustered, rather than linear or arranged in some other spatial pattern; and b) the series is not moving over its lifetime. I always recommend measuring the mean centers at every 3 or 5 iterations to see if it is moving over the series' lifetime, in which case forecasting has to be adjusted to account for where the series is going. Forecasting should also include some consideration of distance between incidents.

Ultimately, when forecasting, the analyst is creating a model that describes what the offender is doing, then applying the model to predict the future. A standard-deviation-of-the-coordinates method is a good model if the offender prefers a general area and strikes more or less randomly within that area. More sophisticated models are needed for more sophisticated series. There is no one "way" to forecast spatially or temporally.

The IACA's tactical crime analysis course does a pretty good job teaching a variety of techniques that deal with time, coordinates, direction, and distance, but we've done a poor job capturing these techniques in any referenceable literature—and hardly any research has been directed in evaluating the effectiveness of various techniques. We need a lot more articles and books on this subject.

Best wishes,

Christopher W. Bruce

Vice President of Membership

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From: IACAList <iacalist-bounces+vpmembership=iaca.net@listserve.com> **On Behalf Of** Kimberly Thomas via IACAList
Sent: Monday, July 15, 2019 13:20
To: 'Daniel Schwartz' <Daniel.Schwartz@humber.ca>; iacalist@iaca.net
Subject: Re: [IACA] [EXTERNAL] Is anyone using the "Gottlieb method"?

I am using it and it works!

Kimberly Thomas, Crime Analyst, BA, CCIA

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From: IACAList [mailto:iacalist-bounces+kthomas=ci.fay.nc.us@listserve.com] **On Behalf Of** Daniel Schwartz via IACAList
Sent: Sunday, July 14, 2019 11:24 AM

To: iacalist@iaca.net
Subject: [EXTERNAL][IACA] Is anyone using the "Gottlieb method"?

Hi all,

I'm wondering if any working crime analysts actually use or have used the "Gottlieb method" for predicting the next crime in a crime series (as outlined in Steven Gottlieb, "Crime Analysis: From first report to final arrest," pp.395-401).

I currently teach this method in a crime analysis course because it's a fun way to show students a direct application of math-based crime analysis. However, I'm wondering if it's actually employed by anyone in the field.

Thank you!

Regards,

Daniel

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